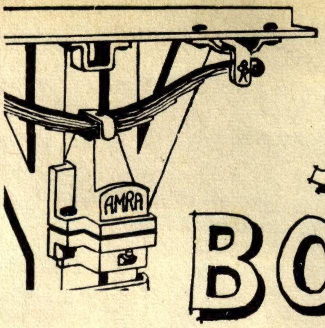

Editorial JOURNAL BOX

JAN-FEB
1968

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YOUR PERMANENT CLUB ROOM.

It is pleasing to note that the Victorian Branch now has a permanent club room. This has been proved in the past to be the greatest boost to members' interest. It seems that many members, even those who have quite a collection of motive power, have no layout, or at least no suitable layout on which their pride and joy can perform. The permanent club room can provide the layout and the appropriate operation.

To those clubs who are still hoping - go to it. There are many premises available at very low rental, and many means of raising this rental - displays, raffles, donations, proceeds from auctions, sale of components made by the club, to mention just a few. You will never look back.

COVER PHOTO JANUARY-FEBRUARY
Railway bridge over Nambucca River, in N.S.W. Photo by courtesy of N.S.W.G.R:

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Good Trackwork

by A. Dowel

STANDARDS.

The very first consideration when writing about trackwork, must be "track and wheel standards". This subject tends to frighten a lot of members, but really it is quite simple, if only one can take the time to study it. It is terribly important, because the standard of operation - indeed the interest in the hobby - will be affected by just how well you understand wheel and track standards.

Track has two main dimensions to consider, shown in Figure 1:-

(a) gauge - the inside distance between the two running rails.

(b) height - the distance between the tops of the track "spikes" (real or moulded plastic) and the top of the rail.

Wheels have two main dimensions which must be considered, and these are also shown in Figure 1:-

(a) gauge - the outside distance between the wheel flanges.

(b) flange depth - the degree to which the flanges reach down towards the "spikes".

Assuming that wheels have tyres which are wide enough to keep the wheels on the rails, then this is all we would have to worry about, provided that the track does not include point work or crossings.

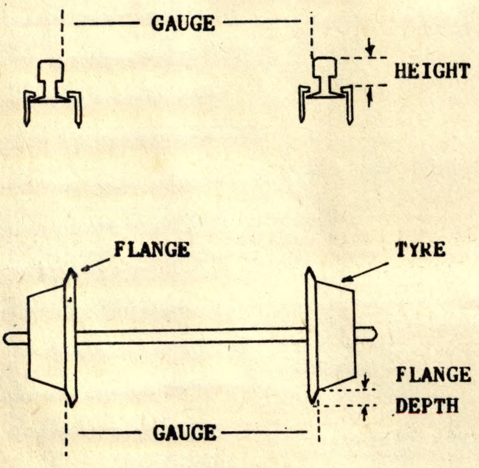


Fig.1. Main Track and Wheel Dimensions

When we come to points, three more standards come into the picture, and thes are shown in Figure 2.

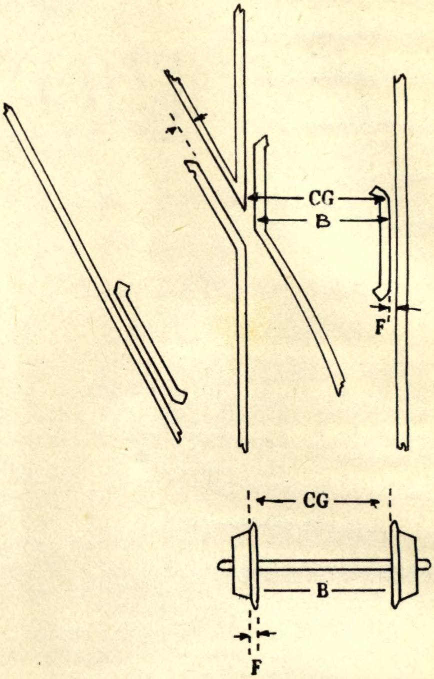


Fig.2. Wheel and Track Standards at Points.

B. is the back to back dimension. Obviously, B. of the wheels must be mor than B. of the points or they will not pa through points.

F. is the "flange width" (wheels) o "flangeway" (points). Again it is obviou that F. of the wheels must be less tha F. of the points or the wheels will no pass.

C.G. is the "check gauge". Now this all tied up with how the check rails, o guard rails work.

If you study Figure 2., you will soo see that if C.G. of the wheels is greate than C.G. of the points, then every no and again, you are going to have that inexplicable derailment at points.

There are other aspects to watch for in wheels and track, but if you watch the above five points, you can be assured of excellent running.

STANDARDS AND THE BEGINNER.

If you are a beginner in the hobby, then the references above may leave you confused. Surely, you say, the newcomer doesn't have to buy with a micrometer in his hand! We are in a rather unusual position in Australia in that almost every wheel and piece of track we buy, whether individually or in complete items and sets, are made overseas - U.S.A., U.K., Japan or Continental Europe. If these countries have standards for wheels and track, they often vary within the country, and certainly vary between countries.

This simply means that if you are prepared to restrict your purchases to the items of one manufacturer, then there is no problem.

If however, you want to mix equipment, then you must ask someone who really knows - an experienced modeller or reputable hobby shop - just whether such mixing is possible.

Generally speaking, if you buy Triang, then you are limited to Triang track and pointwork, as Triang wheels are much bigger than those of other makes.

If you stick to American or Japanese equipment, they are compatible, both being made to N.M.R.A. (U.S.) standards.

. Some continental stock made for the American market also complies with N.M.R.A. standards. The excellent Shinohara points made in Japan will only take stock made to N.M.R.A. standards.

Peco points made in U.K. will take N.M.R.A., most European and the finer of the Triang wheels. (Triang have made various sizes of wheels over the years, many of which can move separately on the axle. Many Triang locomotives rely heavily on "magnadhesion" for adhesion between wheels and track, which commits the buyer to the otherwise undesirable steel track.).

Outside of Triang, the newcomer is well advised to buy only nickel silver rail on plastic sleepers. The most popular of this type in Australia is the Peco "Streamline" track, available in flexible lengths, one yard in length.

Points can be made from lengths of rail available from the major hobby shops, and are simplified by using P.C. (printed circuit) board for sleepers. This board has a thin strip of copper laminated to insulation board. Thus the whole point can be made by soldering. Insulation between rails is achieved by simply filing off narrow strips of the copper.

TRACK LAYING.

There are five golden rules for laying trackwork these days:-

1. Lay the track on plastic foam strips, 1/8" - 3/16". This irons out minor irregularities in the baseboard and gives a ballast-like appearance.
2. Use the minimum number of fixing pins for holding the track to the baseboard. The holes through the sleepers should be pre-drilled to a size larger than the pins to be used, and the pins should not be driven to a point where the heads touch the sleepers. This allows the track to float without distortion. Sticking foam to base, and track to foam with dobs of a flexible adhesive is even better, but pins are needed at least at points (2 per point).
3. Leave expansion gaps for heat expansion, particularly on straights.
4. Preform the curvature in each rail before laying curved track. The rails of flexible yard lengths are easily removable and can be curved by passing each rail through a jig as shown in Figure 3. The closer the middle nail of the jig, the sharper the curve of the rail.

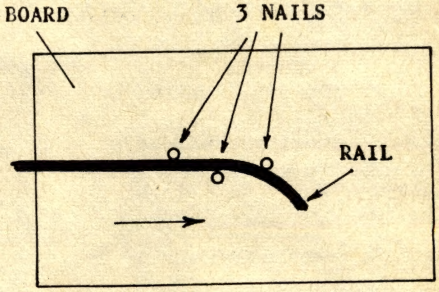


Fig.3. **Rail Curving Jig.**

5. Each rail should be faintly chamfered inside the head before laying to avoid bad alignment due to rail twist or loose fish plate joiners.

This is shown exaggerated in Figure 4.

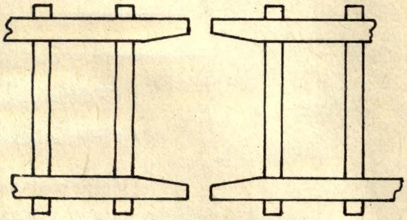


Fig.4. Rail Chamfering.

It is most essential to use insulating fish plates at all of the electrical gaps in the track, but as this is almost a subject within itself, it will be dealt with in the next issue, "The Electrical Side".

CORRECTIONS, PLEASE.

In our rush to get your November/December issue (the first of a new process) to you by Xmas, we made some mistakes. Would you please note the following two of them:-

1. On page 15, Colin Gilbertson's excellent article on N.S.W.G.R. Hoppers should have been associated with his two photos, one of which appeared on page 2 and the other on the inside back cover. Sorry, Colin.

2. On page 20, the three columns of drawing prices available from Jack McMicking and Les Fordham should be headed:-

O - 7 mm OO - 4 mm HO - 3.5 mm.

Branch Notes

VICTORIAN BRANCH.

The Christmas get-together at the December meeting was delayed a little because of the acceptance of rules and regulations governing the use of the club room at North Port.

A working night organised at this meeting to paint the club room completed the undercoat. The completion of the painting is anticipated at an early date.

Stretch of tramline near Sarina. Note high grass on each side and spilt cane along track.

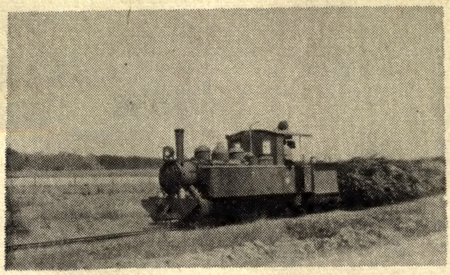
JOURNAL MATERIAL.

Whilst we have plenty of articles in hand about prototype, the cupboard is bare for items about layouts and model building. What about it - surely now is the time to let your fellow members know about the layout built by you, or about that special model that you are proud of. Photos are also in short supply right now, so let's have a print or two of those negatives that are worth showing.

EDITOR.

The Cane Tramways Of Queensland

by Bill Hungerford



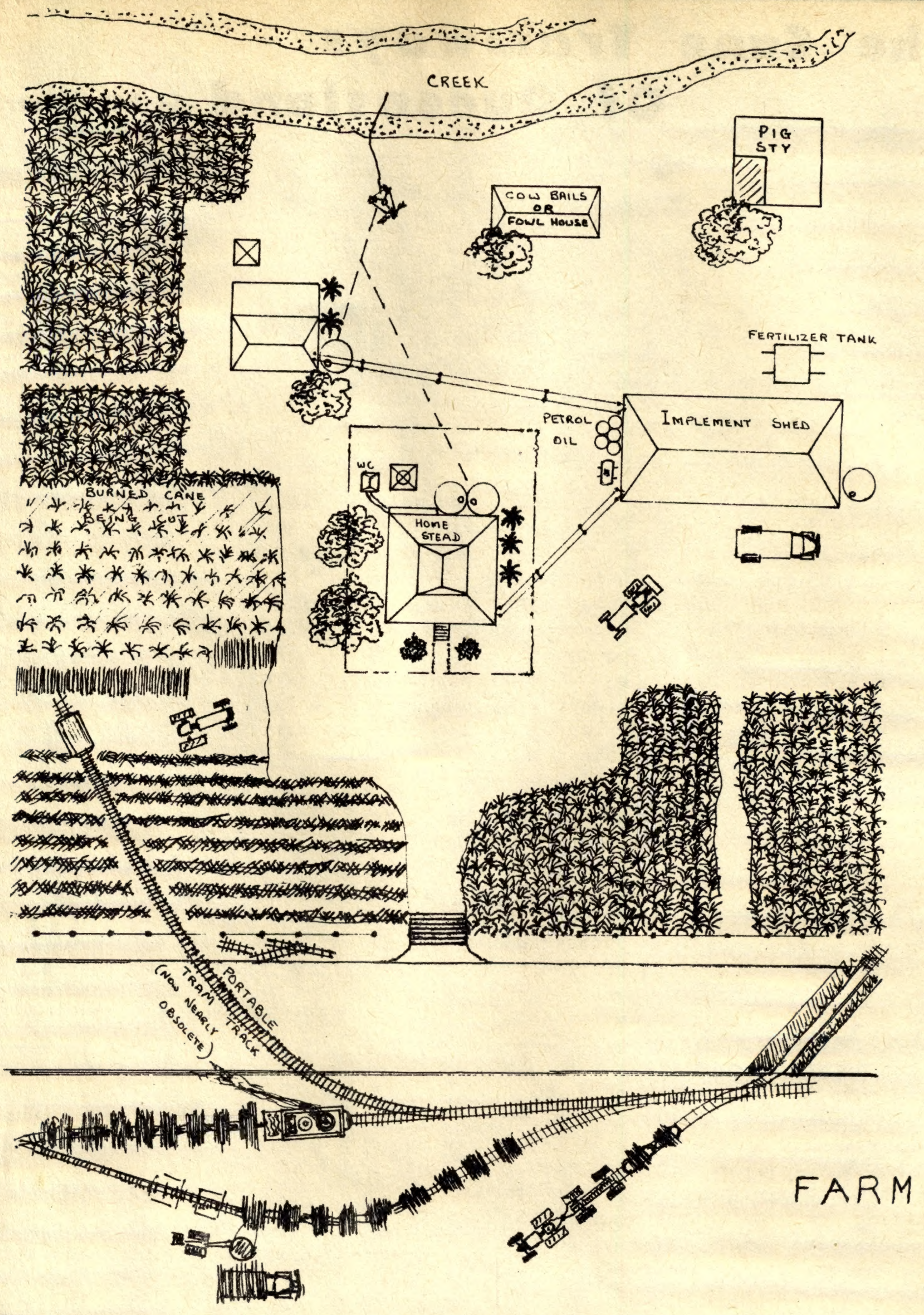
No. 7 Perry 0-6-2 Passing Eton with rake for Eton Mill, 1961.

Let's take a look down an average sugar valley somewhere in Queensland. Below us, a small creek will be seen winding its way down the centre of the valley with farms stretching out from each side like a huge green carpet to the foothills. Here and there, faded, tarnished patches and squares will show where the cane has been burnt off the night before; and on closer inspection, cutters may be seen cutting and loading the burnt cane on to lorries and trailers for cartage to the local sidings.

Further down near an old high-blocked homestead surrounded by large shady mango trees, a chunky 0-6-0 diesel loco with fifty or so empties is slowly working its way up the valley floor over countless low wooden trestle bridges and level crossings. As it approaches a siding, a figure leaves the loco and runs forward past it to change the points. Using hand signals only between driver and points-boy (fireman in steam days), a dozen bins or trucks are shunted into the siding and a few minutes later, the rest of the rake moves on up the valley, past a modern split-level home with new steel frame implement sheds, then veers off through the cane-fields to another siding on the other side of the valley. An hour later, it reaches the top of the valley: Bandicoot Creek, a tin-pot little place with half a dozen dilapidated houses and mixed post office store; it used to have a police station and two pubs in the gold-field days, but these are long since gone with the miners who used to come down for their weekly benders. Here the loco delivers the last of its empties and starts the return trip, now picking up the loaded trucks. Four miles down on the return trip, our loco and rake rumble past a gang of navvies repairing the line and picking up spewed cane and smashed tram trucks from a pile-up the night before. They're naturally going "crook": it's the third night in a row they've been pulled out. A mile out of Mill Town, an old 0-4-2 steamer, built in about 1908, can be seen acting as sweeper, picking up the stray trucks left behind by the diesels on their longer runs.

Mill Town is not much different from any other small town of about 300-1000 people. Its houses range from new to very old. Most are high-blocked, and palms (not always coconuts), mangoes and paw paws are in abundance. It has a few shops, churches and hotels and a school. Its railway station quite often is the ground-level type and the railway line and tramline pass down the middle of the main street. In one huge corner of the town, on the banks of the creek, stands the mill, a mixture of large corrugated iron buildings and smoking chimney stacks, surrounded by rows of tram and railway lines (some mixed gauge) and outbuildings.

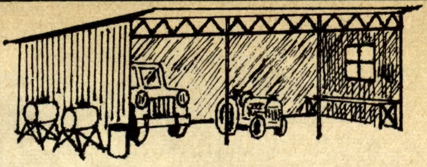
If you pass further down the valley, the tramlines and farms will continue. A mechanical harvester may be seen working, its way down the rows of cane; or a Q.G.R. B18¼ or PB15 may chuff past with a string of flat tops, each carrying four pyramid-shaped bins of raw sugar, on its way to the refineries, or molasses tankers, much like oil tankers, heading for the power alcohol plants. If it is late afternoon, large fires may be seen to flare up as new paddocks are burnt off for tomorrow's cut.



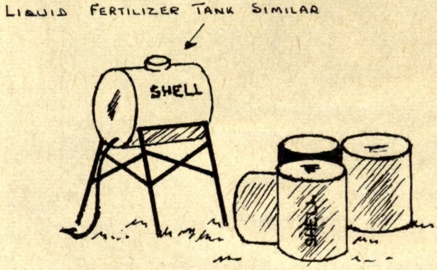
THE FARM.

The Farm sketch shows am average cane farm layout during the crushing season.

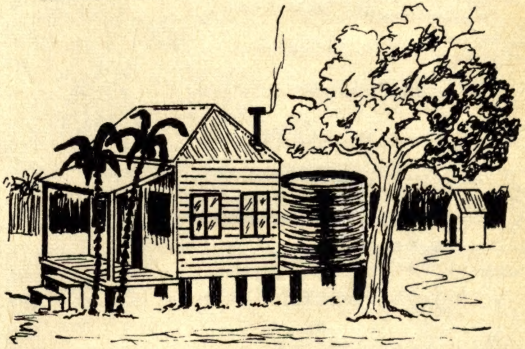
The main house more than likely will be high-blocked, as is common in Queensland. If it is old, it will be surrounded by large shady trees and vines such as mango and bougainvilia, but if the house is new, these may not be so plentiful as they have not had time to grow. Nearby a flower and vegetable garden will be grouped together with patches of paw paws and bananas, especially near the water supply tanks or



IMPLEMENT SHED



FUEL OIL DUMP



CANE-CUTTERS QUARTERS.

rains. Many farm houses have a small ire-netting or picket fence surrounding hem to keep the farm animals out of the arden.

The implement shed would be about 70 x 30 feet, but there are no set rules. All equipment such as tractors, lorries and plant are stored inside. Repairs are also done there and nowadays, modern machinery such as welders, grinders and bench machinery is common. Outside the shed, but well away from each other are an oil dump and tank and a liquid fertiliser tank.

The cane-cutters' quarters also can be anything. The farmer may have built a new house and left the old one for the cutters or he may have a small one or two-roomed cottage which is more common.

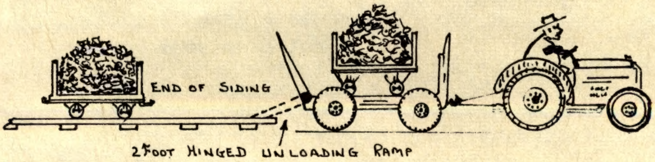
Windmills are still common and a fowlhouse and bails for the old cow. Many farms also run a few pigs and some, if they have a bit of spare ground, a full dairy or beef cattle herd. Some farms also generate their own electricity or kill their own meat, so an engine shed and meat house are not out of place.

CANE.

As said before, the cane is burnt before cutting; this makes it easier to cut and load and also chases out the snakes and other vermin. Because of this, it is grown in blocks (as shown in the Farm sketch), so that only a part is burnt each day, as it quickly loses its juice or CCS value after burning.

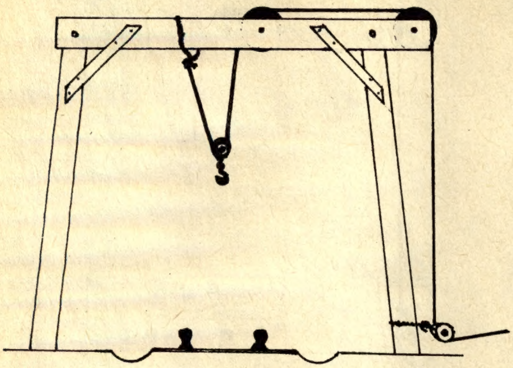
The cane is harvested in many ways. The most well known of course is by cutters moving down the rows, cutting down the sticks by hand, which are in turn loaded on to waiting tram trucks on portable track, much like the tinplate rails seen in toy train sets. (This method is not seen very often nowadays). Or it is picked up by tractors equipped with hydraulic cane loaders on to lorries, trailers or tram trucks on a short piece of tramline carried by lorries or trailers, a more modern method.

Nowadays, the mechanical harvesters such as the Massey-Ferguson and Don Missi, which chop up the cane as they cut it and dump it into tram bins, and the Toff and others which cut it into sticks to be loaded on to the old type tram trucks, do a much quicker job.



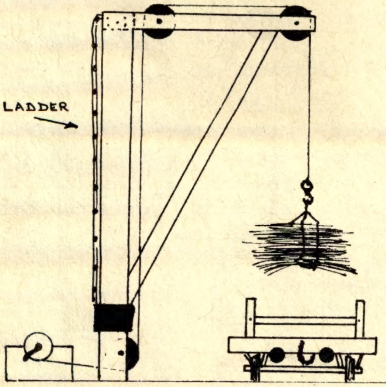
TRAM TRUCK TRAILOR

SIDINGS.



IN THIS TYPE CANE IS LIFTED FROM LORRY WHICH IS THEN REMOVED & REPLACED BY TRAM TRUCK. OFTEN SEEN ON SMALL SIDINGS.

The sidings depend mainly on the type of loading. Where cane is transferred from lorries to trucks, the lift or hoist is used. The sketch shows a very common type which is powered by horses, motors or even by hand. Many other types are used. Where the cane is carted on tram truck trailers, the sidings have a dead end and ramp so that the trucks can be run off the back of the trailer on to the siding by gravity. Very few sidings consist of more than two or three tracks.



VERY COMMON CANE LIFT

TRAMLINE.

As a rule, tramline is laid straight on the ground without ballast. Sleepers are spaced roughly 22" centre to centre and measure 5 ft. x 8 ins. x 4 ins. Today much rail from closed down railway lines is used. Tall guinea grass always seems to grow on each side of the track and before each crushing, a grass-cutting attachment is passed over the rails. Tunnels are a real rarity even though I have seen a very short version. Wooden trestle bridges are very common, though many are being replaced by steel-plate bridges. In areas which have seasonal flooding, a prefab. type of bridge which can be easily dismantled for the wet slack season is often used. Level crossings are very common but crossing gates or such like as in railways are very rare. Most are heralded with the rectangular sign "Tram" or "Tramline". Nowadays, on main roads, a six-foot strip of concrete is laid on each side of the lines to reduce damage to the roadway.

DIESEL LOCOS.

Most diesel locos are 0-6-0 outside frame type, weighing between 14 and 30 tons and measuring roughly 9 feet high, 20 feet long and 6 feet wide. The local manufacturers, Clyde and Commonwealth Engineering, are by far the most common, especially in the heavier types. For yard and shunting duties, the smaller 0-4-0 are often used. The tramline gangs also use some home-grown specials, such as altered motor cars and motorised tram trucks. A few years ago, I heard of one mill that made up an 0-4-0 diesel loco using the frame and cabin of an old steam loco. This I have not seen so I could not guarantee its truth.

STEAM LOCOS.

For main line running, the steamers averaged between 10 and 20 tons weight, measured between 15 and 20 feet long by 8-9

Feet high by 5 feet wide. There were many manufacturers, mainly from overseas, so that there are many types, shapes and wheel arrangements. Quite a few were brought from closed down mines and timber lines, etc., and many have interesting histories such as the 4-6-0 Hunsletts, which were originally built for use on the front line in France during World War I and still carry their War Department plates. Of those specially built for the industry, Fowlers and Krauss were the most common with a wheel arrangement of 0-6-2 or 0-4-2 with 0-6-0 not far behind. Many, but not all, had outside frames and the large diamond smoke stacks usually associated with sugar trains. Other prominent features are the large side tanks and open airy cabins. For long runs, a four or six wheel tender is used. Around the mill, 0-4-0s were common but here in many cases horses, mules or tractors were used.

TRAM TRUCKS.

Different mills will naturally have slightly different trucks, especially in the wheel base, which is governed by the size of tipping mechanism used to unload the cane. Steel wagons are gradually replacing the wooden ones. Both are made on the same base.

The sugar bin truck used for mechanically chopped cane is made from 1-1/4" steel pipe and has a steel mesh enclosure even though some mills use chain wire with corrugated iron ends. The floor is corrugated iron.

The tram truck version carries wooden upright stanchions but is otherwise all steel. Both these wagons can be easily interchanged.

The standard wooden truck is slightly lower than its steel counterpart and stanchions are bolted on to the wagon.

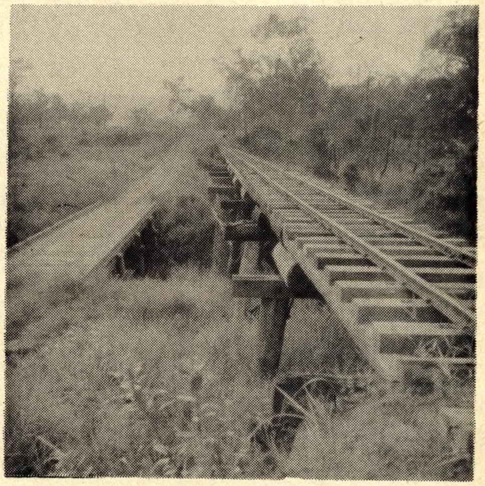
The ballast truck is a small open wagon used by the tramline gangs. Its sides are hinged for unloading and it is made on a standard wooden truck base.

The long wheel base wagon is an old type used when cane was raked off the trucks. Some are still used for outside areas where the cane is unloaded away from the mill, i.e., on to railway wagons or semi-trailers.

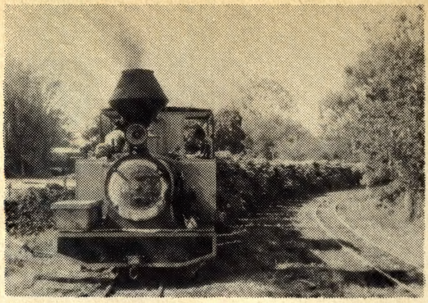
The bogie wagon was an idea that never worked out. A few were made but with the installation of cane tips, they were never used. Altered wagons are used by the tramline gangs for long loads like rails and bridge piers and one mill I know has a poison tank mounted on one.

SUMMARY.

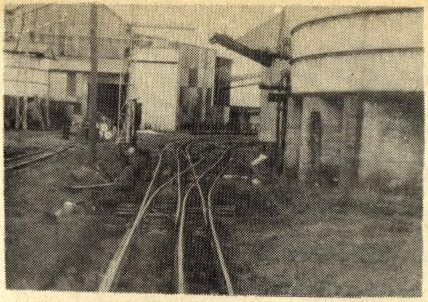
What I have written here may be misleading in some cases. For instance, cane is not only grown in valleys, but it does require a well-drained fertile soil, which in most cases has to be re-fertilised regularly, so that the large white liquid fertiliser distribution depots (much like an oil depot) and bagged fertiliser plants are common sights. Some sugar towns are real cities, others just a collection of old shanties. Horses are rarely seen nowadays, as wheeled tractors have almost taken over. Wheeled tractors outnumber tracked tractors by about ten to one. Much cane is carried by the Q.G.R. using mainly steam loco and FG open wagons, but a lot is carried by road using lorries and semi-trailers. Also there are many different types of wagons, steel ballast hoppers, personnel carriers, machinery wagons (air compressors and such like), even box cars for delivering goods to the farmers.



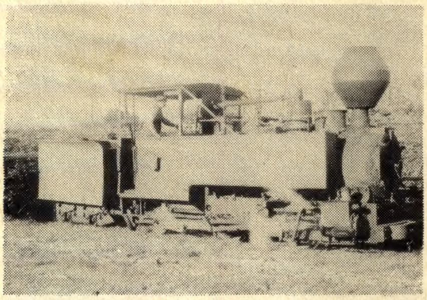
Trestle Bridge near Septimus (North Eton Mill area).



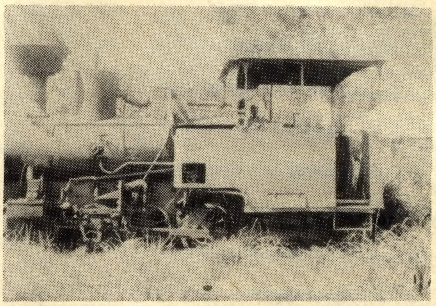
Marian Central Mill, 1961 — **Dick Kerr** 0-4-2 with rake.



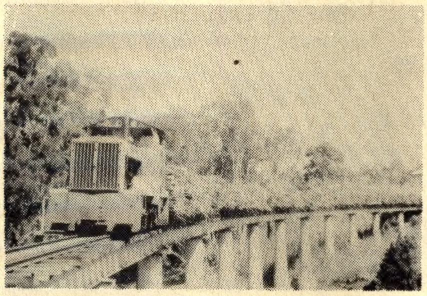
Dual Gauge Trackwork, Marian Central Mill. (2 ft. and 3 ft. 6 in. gauge).



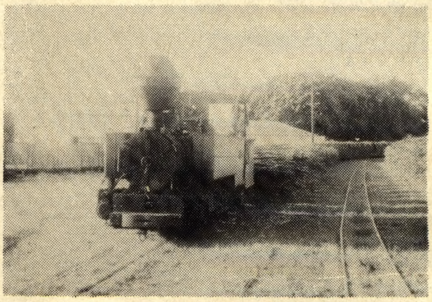
Fowler 0-4-2 in use during 1966 at Plane Creek Mill.



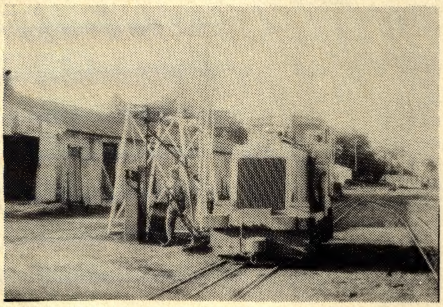
Krauss 0-6-0 loco at Plane Creek Mill. Ready for scrapping when this was taken. The loco is affectionately known as "Millie".



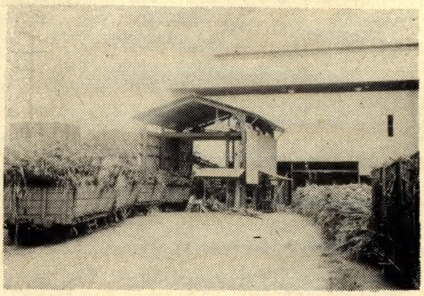
Commonwealth Engineering loco and rake crossing Plane Creek on way to Mill, 1966.



Fowler 0-4-2 arriving at Plane Creek Mill with rake, December, 1966.



Clyde 0-6-0 Diesel fueling up at Plane Creek Mill, Sarina, 1966.



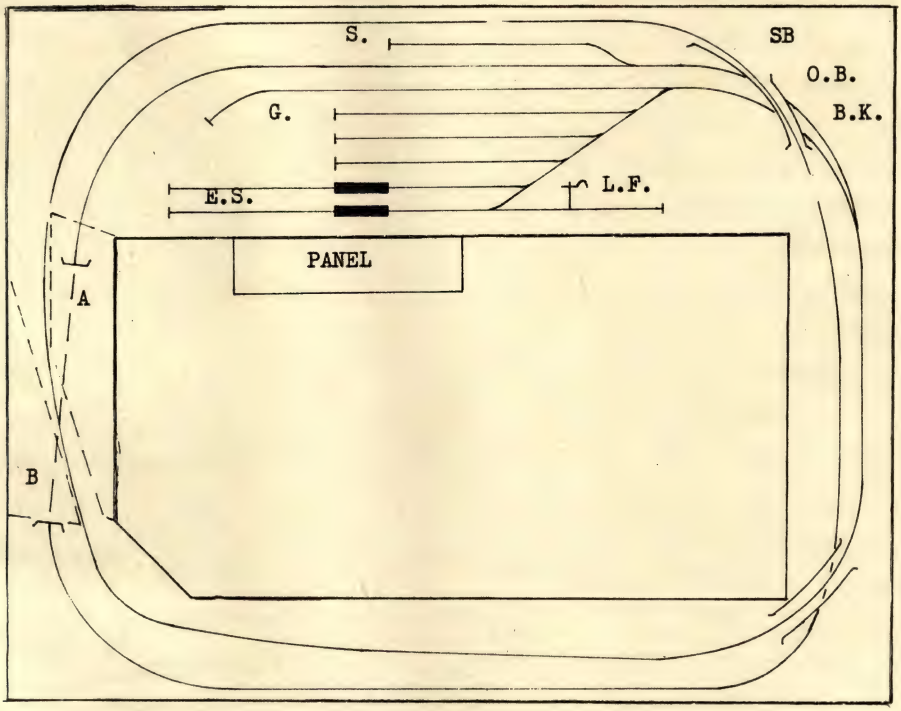
Railway wagons (FG) and tram trucks entering the mill carrier. Note the railways rake for unloading. The trams are tipped.

A Budget Branch Or Man Over Lack Of Money

by P. Mottram

We've had lines built on piano tops and ines built in suitcases, but we've never ad a line built with a maximum expenditure f $8.05. Well, not until I did it! From ow on, there will be no excuse for a railay modeller without a railway layout, beause now we have small and also inexpensve layouts.

The school which I have atended for the last ten years now has a layout 8' x 7' at a total cost of $8.05! Yes, 8' x 7'! I must however point out that there is operating space in the middle, so that it is not solid 8' x 7'. (See plan of layout).



Plan of Layout.

ASEBOARDS.

I used any old scrap wood I could lay y hands on – warped, bent, cracked or therwise. The basic framework was two ' x 1' sections, one 1' x 8' section and ne 8' x 2' section. Then after the basic ramework had been made, cross members ere placed at intervals of approximately ne foot.

The larger lengths of wood (i.e., the 8' nd 4' lengths) were cut from old transormer packing cases. The wood is not of very high quality, being knotty and frequently warped. This however, did not discourage me. The end cross members were cut from cable drums, this wood being about 6" x 2". Other cross members were cut from smaller pieces of wood which were scraps obtained from builders and a friend of my parents, who had scrap timber left over from building his house. The average cross-section was 1-1/2" x 1".

The wood framework was nailed together

except for badly warped pieces which were screwed together.

In some places, extra supports and cross members were required and these were cut as required. The elevated parts of the layout were achieved by attaching uprights to the cross members and nailing the track-bed on top.

The trackbed is ply as well as a large amount of Masonite. The only "solid sheet" part of the layout is the station-yard where the tracks are too close to lay board under each track.

I have been told very often that using Masonite is a stupid thing to do because it moves, but I had been given a pile of narrow strips and therefore I had to use it, as it was all I had. To eliminate warping, I nailed trim-strips obtained as scrap-wood to the underside of the board and we now have some strips of Masonite stretching for distances up to five feet without a support.

TRACKWORK.

This is the only thing which we spent any amount of money on (just over seven dollars, to be exact). I bought Peco, as I think it can stand a lot more than other flexible tracks. Some Triang is used as we cannot afford to buy all the track we need yet. The flexible track was bent roughly to the shape it will have when laid. Next, a long length of string with a pencil attached was used to mark out the shape of the track. The track is laid in the usual way with the centre of the track following the drawn line. (In case some of you are still "in the dark", the pencil and string are used as a compass to mark out the various radii). The track in the yard has not as yet been laid.

The gradient in some places is as steep as 1 in 17, but trains are normally run in the opposite direction, so this is on a down-grade. Since building, I have re-laid this section, relieving the steep grades, but generally, trains are still run the opposite way round as all uphill grades in this direction are not steeper than about 1 in 30.

None of the curves is under two-foot radius.

At the moment, the track has no underlay, although it has ballast. The ballast is dried tea-leaves (preferably fine grade) with diluted grey paint splashed on. The effect is very good. I used "Quick Tips", so I do not know how it would work with other types.

SCENERY.

I have been wanting to try out the hard-shell scenery method for some time and this layout became the victim of my experiments. I was limited however, by one factor - money! I have a friend whose father is a lecturer in dentistry and he, being a fellow railway enthusiast, gave us some dental plaster which when mixed with a medium-grade plaster (which I scrounged) in the ratio of 1 : 2, gave a plaster mixture which remained soft for about fifteen minutes after mixing (we only used small amounts at a time). The framework for hard-shell scenery was set up in the usual fashion and padded with old newspaper. As we could not afford paper towels, we used newspaper in strip instead. The mixture of plaster is a very good substitute for Hydrocal, although the original is probably much better.

The scenery was made as in "Model Railroader", March 1965, or A.M.R.A. Journal No. 61. Coloured sawdust was thrown on after the surface had been painted.

The dyeing of the sawdust is worth mentioning. I bought three colours: Royal Blue, Pastel Yellow and Peacock Green and mixed up various colours (about ten) ranging from yellow to very dark bluey-green. These were mixed in small quantities and the sawdust dyed. A small amount of each was kept separate but the rest of the sawdust was mixed after drying. Then a large quantity of green was made and the sawdust dyed. This green, I think, was in the ratio of 1 yellow to 2 green, but this can easily be checked against the grass in your garden (assuming you have "normal" grass in your garden!) This is added to the other mixture of sawdust. I thought I ought to mention this as so many modellers, even experienced ones, quite often when making scenic materials only make about three shades and these are quite often not very realistic, spoiling an otherwise good layout. If you are mixing your own colouring matter, add a few unusual shades to your sawdust in small quantities: very often you get highly pleasing results, even though the colours in the mixing conainer may look very unrealistic.

We have not got round to putting trees n the layout yet, but as we have a large uantity of sawdust left over, we will be oing a lot more experimenting.

The buildings, all hand-made, will be ealt with in another article as although he boys constructing them may not be dong a perfect job, the way in which they are being done is very good.

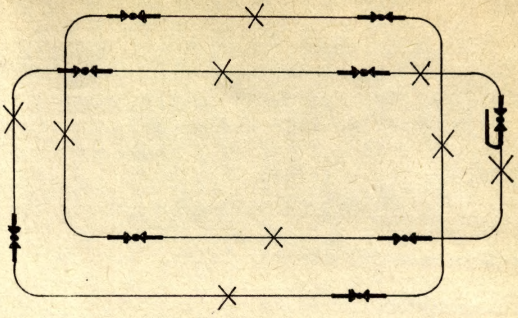
ELECTRICAL CONTROLS.

At the moment, electrical gadgets are practically non-existent, but I am working on the method of the motor-driven drum described in Journal No. 63 to work accessories. The layout has been wired for sectioning, but the control panel is still under construction. When completed, it will have push-button control with illuminated track diagram to show which rail-sections are powered (see Figs. 2A and 2B). I have managed to talk a physics master at the school into building a simulated inertia control unit for which I have the plans.

CONCLUSION.

This article is intended for the younger members who may not have the money to build a layout using good materials and also for anyone who is foolish enough to try to start a railway club in a school. We have a club of about a dozen members in a school where not only do the boys laugh at railway modellers, but so do the majority of the staff and the headmaster is ighly unco-operative (it took me over a year to get a place to store the layout, although I suggested that the present site should be used). On the other hand, if someone wants to have a go, here's luck - you'll need it!

Finally, adapting poor materials makes you an experienced modeller overnight - I'm still trying to get over the headaches that follow!



• This represents end of section

→ These arrows light up when the respective sections
— have power delivered to them

× Section switches

Fig. 2a.

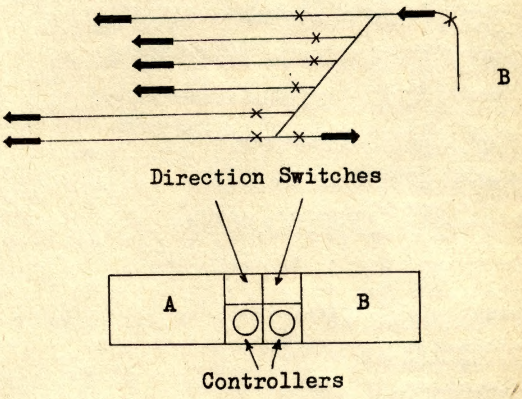


Fig. 2b.

RIGHT OF WAY GURGLE.

The Metro-Gauge Line from Baghdad West to Ma'qil near Basra has access to exchange sidings near Tanuma across the Shatt-Al-Arab from Basra by means of a road-rail bridge that is lowered under the water to let boats pass.

Workshop Topics

by Con Rodd

A set of cast-iron driving wheels from a Bassett-Lowke O-gauge locomotive was to be insulated for two-rail operation, and to be improved to more scale-like tread and flange profile. Fig. 1 shows a section through the original wheel.

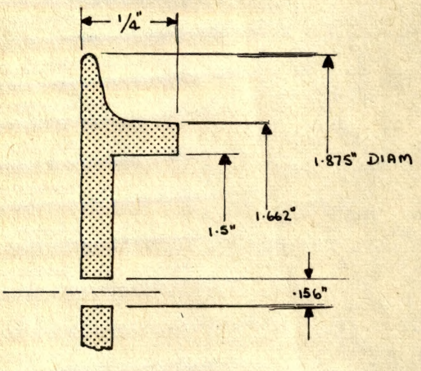


FIG. 1.

Four discs, 1-7/8" × 5/16" thick of Grade 4 free-cutting mild steel were obtained (we all have our friends!); three to be used as tyres for the insulated wheels and one to hold all six wheels during turning.

Each of the three was held in the three-jaw chuck, drilled and rough-bored to 1-1/2" diameter.

A nice short, sharp rigid boring tool was then set up in the lathe and each ring rechucked and finish-bored to 1-9/16" diameter and faced. The exact size is not critical, but for convenience later, all three must be the same. Facing at this stage ensured that the bore was square to the end face.

Each ring was then held by the bore, and with the faced side firmly against the chuckjaw, turned to the profile shown in Fig. 2.

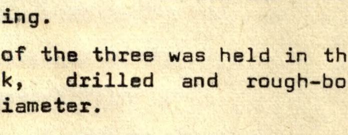


FIG. 2

At the completion of each boring, turning or facing operation, all burrs and sharp edges were removed with either a scraper or a smooth file.

The rings were then put to one side and work commenced on the wheels.

The fourth disc was faced and had a small step turned on it so that it could be reversed and held in the chuck with the resulting shoulder firmly against the jaws. It was then faced off, carefully centred, drilled and reamed 5/32" right through.

A short (1/2") length of 5/32" silver steel served to locate the wheel by its axle hole.

The chuck was then removed, care being taken to avoid dislodging the disc and two holes drilled and tapped 1/8" Whit. between diametrically opposite pairs of spokes. This allowed the wheel to be firmly secured against the steel disc, while the 5/32" shaft ensured concentricity; thus the wheels could be mounted in the lathe any number of times and still run truly. The internal diameter of the rings was then determined as accurately as possible and then three wheels (all from the same side of the loco) turned down to .057" less than this diameter. This allows for the use of 1/32" red fibre insulation with an interference of .005" for a press fit. A slight chamfer was formed at the back of each wheel.

Three strips of fibre were then cut, 3/8" wide and long enough to just fit around a wheel centre.

Each strip was then fitted inside a ring, by curving the strip as in Fig. 3, and butting the ends together. The strip was then forced back to the steel ring by rolling a piece of rod around the inside. In this way, the fibre is a tight fit inside the ring and the ends are butted hard together.

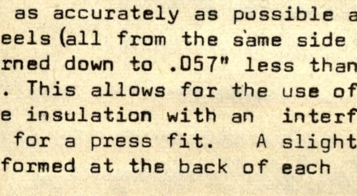


FIG. 3

The combined rings were then laid back down on a surface plate and the edge of the fibre lined up with the steel as in Fig. 4.

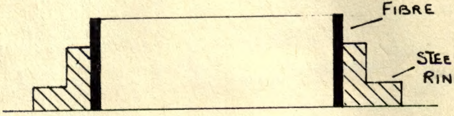


FIG. 4.

The inside of the ring was then lightly greased and the wheel centre pressed in until the back of the centre was also flush, as in Fig. 5.

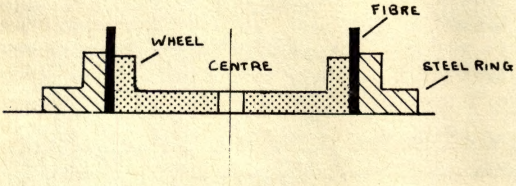


FIG. 5.

From here on, all six wheels (three insulated, three not) were processed similarly, being mounted in turn on the steel disc and first faced off to .187" thick, then rough-turned on both tread and flange diameters and the final profile formed with a tool ground as in Fig. 6.

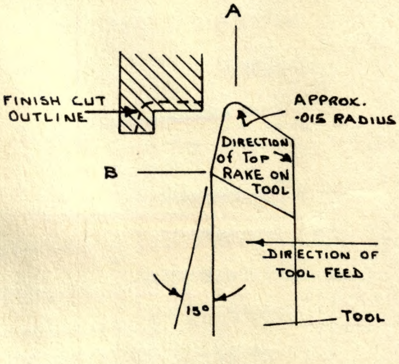


FIG. 6

It can be seen that the cutting edge is only that part between A. and B., hence the top rake is in the direction shown.

It may also be noticed that the wheels have cylindrical not coned threads. I hold that coned treads in models have no virtue in running; the only benefit they have is if the wheels are die cast: they can then be easily extracted from the die. What think you, Mr. Reader?

All six wheels were turned to size without changing the position of the cross-slide, thus ensuring uniformity of size. The flanges are of similar size, except for two wheels, the centre driver of each side, which had their flanges turned right off.

Each wheel (now four) was then reversed, the tool swung round to give a 10° face, the back of each flange faced, and the crest rounded off with a fine file. The final profile resembled that in Fig. 7 and is thought to be a considerable improvement on the original.

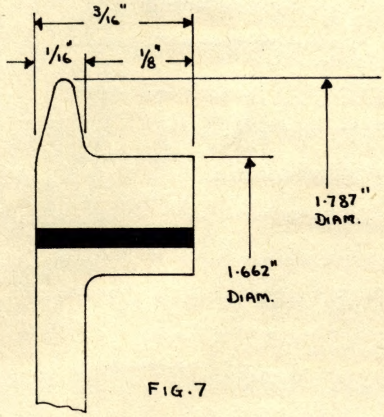


FIG. 7

This may seem to be a long and monotonous method of two railing and/or turning wheels, but I believe there are many advantages:-

1. The wheels finish up quite true, in both the concentric and wobble sense, even if the original wheels were not.
2. All diameters and profiles are uniform.
3. The method is applicable to wheels of all sizes and for all gauges.
4. Reliance is not placed on pressing the wheel on to a mandrel and expecting the press fit to withstand turning forces. Since most (all?) disc wheels have sling holes in them, they can be just as easily made bv this method, the driving and clamping

screws then passing through both holes.

5. The use of, and frequent reference to the micrometer collars on the lathe make the maintenance of uniform lengths and diameters not at all difficult.

The main thing is that the owner of the wheels is quite satisfied - and I suppose that is all that really matters.

BEST ARTICLE AND PHOTO.

SEPTEMBER/OCTOBER ISSUE.

The best article in this issue was voted by the three independent judges to be "Constructing a Timber Trestle Bridge" by M. Dixon.

The best photo was "A10 Leaving Ipswich".

Congratulations to both contributors.

MODEL RAILWAY FOR SALE.

Two level portable 15' x 4'. Designed for garage and complete with wire rope, pulleys and winch. Stud 3rd rail easily convertible to two-rail. Trackwork (ERG) complete but needs work.

Scenery 50% completed. Electric points and signals. Geographic plug in twin cab control. Overhead catenary 90% completed.

Choice of several stud or overhead locos and 3-rail stock at half original price if required.

LAYOUT PRICE $40. for quick sale (which is half cost of materials used).

Contact Editor by post in first instance - 82 East Boundary Road, East Bentleigh, Vic. 3165.

Shop Spy

SYDNEY HOBBYSHOPS.

There appear to be very few new items of interest on the Sydney scene, which seems to be usual for this time of the year.

Just arrived at Hobbyco, 561 George St., Sydney, 2000 (phone 61-9655) are three new Wrenn locos, based on the former Hornby Dublo two rail. They are the 4-6-0 Cardiff Castle, 2-8-0 8F loco and the 2-6-4 tank.

J.Searle and Sons, 315 Pitt St., Sydney, 2000 (phone 26-5737) are expecting a new shipment of Marklin in very shortly and this may be here as you read these lines. Searle's also have a number of Triang goods and passenger vehicles at special prices.

John De Horne, of the Fantastic Hobbyshop, 34 Angel Arcade, Sydney, 2000 (phone 28-2318) has a good stock of Austral Modelcraft timbers. An excellent range of the well known Hammatt and Morgan electrical equipment is also held.

On my last visit to North Shore Hobbies, 8 Post Office St., Pymble, 2073, (phone 449-2656), one item which did catch my eye was a packet of Kibri oil drums. When assembled, there is a total of thirty-two drums. These are ideal for a load in open wagons, such as my 'S' wagon article in the May-June 1967 issue.

COLIN GILBERTSON.

COINCIDENCE?

On 10th July, 1933, the Thames-Forth Express, drawn by a Midland Compound No. 1010 Locomotive, collided with a local goods at Little Salkhald (between Carlysle and Appleby). On 19th January, 1918, at the exact spot of the above collision, the same locomotive hauling the down express was derailed where earth had slipped down the cutting wall.